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SUGAR REPORTS

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Molasses
Issue

This report presents a review of developments in the molasses market that have occurred since the issuance of Sugar Reports 16M in October, 1952. Molasses supplies, utilization and prices are discussed, as well as the ethyl alcohol situation as it affects the molasses market. This report also brings up-to-date statistical series that have appeared in previous molasses reports. Whenever possible, data have been revised and changed to a calendar year basis in order to be more useful to the trade than the fiscal year data published heretofore.

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THE INDUSTRIAL MOLASSES SITUATIONGeneral Market Summary

Molasses prices which stood at the record high of 36.5 cents per gallon (New York-wholesale) and 34.5 cents (New Orleans-wholesale) in January 1951 had declined to 11.5 and 9.5 cents, respectively, by October 21, 1952, when the last molasses report was published. Market conditions responsible for this downward adjustment had not fully worked themselves out and prices declined further to a low of 10.5 cents at New York and 9.0 cents at New Orleans in early November, 1952.

One of the major causes of the severe decline in molasses prices was the 56.5 percent drop in ethyl alcohol prices which tumbled from 90 cents a gallon in 1951 to 40 cents in December, 1952. Historically, over the years molasses prices have been closely related to alcohol prices. A smaller than anticipated demand for domestic alcohol for the synthetic rubber program, large alcohol imports, and expanded synthetic and fermentation alcohol production resulted in a build-up of alcohol inventories. This situation coupled with the shut-down in the last half of 1952 of Reconstruction Finance Corporation facilities utilizing ethyl alcohol in synthetic rubber production resulted in a weakened market and the consequent decline in the price of alcohol. In addition to the worsening alcohol situation, the record 1952 Cuban molasses crop of about 400 million gallons was a factor of major importance contributing to the decline in molasses prices.

In the last part of November, molasses prices staged a slight recovery of a half cent per gallon and remained at 10.5 cents (New York) and 9.5 cents (New Orleans) for the remainder of 1952. Another half cent increase occurred in early January 1953. Further half cent increases occurred in late February, early March, and in late March when prices reached 12.5 cents in New York and 11.5 cents at New Orleans. A slight seasonal decline occurred during the late spring and early summer when prices dropped to 11.5 cents and 10 cents, respectively, at New York and New Orleans. Usually spring and summer are the slack seasons for feed molasses usage. By late July prices had recovered at both these major markets and were back to the 12.5 cents (New York) and 11.5 cents (New Orleans) levels in August. The New York price has remained at 12.5 cents but the level of the New Orleans market is currently 11.0 cents. (October 1953 average price.)

Several developments have contributed to this year's somewhat brighter picture in the molasses market. By drastically reducing its asking prices, Cuba was able to dispose of heavy 1952 crop supplies in November and December of 1952. The special price of 4.5 cents per gallon set by Cuba for molasses entering into alcohol production resulted in large purchases by industrial alcohol producers. Restrictions were placed on the 1953 sugar crop by the Cuban Government which consequently resulted in smaller producer molasses supplies in 1953. Also Great Britain which obtained its total 1952 molasses requirements from other sources made purchases from Cuba and Puerto Rico of about 30 and 10 million gallons, respectively, in 1953. Buyers' interest was strong

PRICE OF 2.5 GALLONS OF BLACKSTRAP MOLASSES (F.O.B. TANK CAR, N.Y.) COMPARED WITH PRICE OF 1 GALLON OF ETHYL ALCOHOL (190 PROOF, TANK CAR, N.Y.)

ANNUALLY, 1935-50; MONTHLY, JANUARY 1951 — OCTOBER 1953

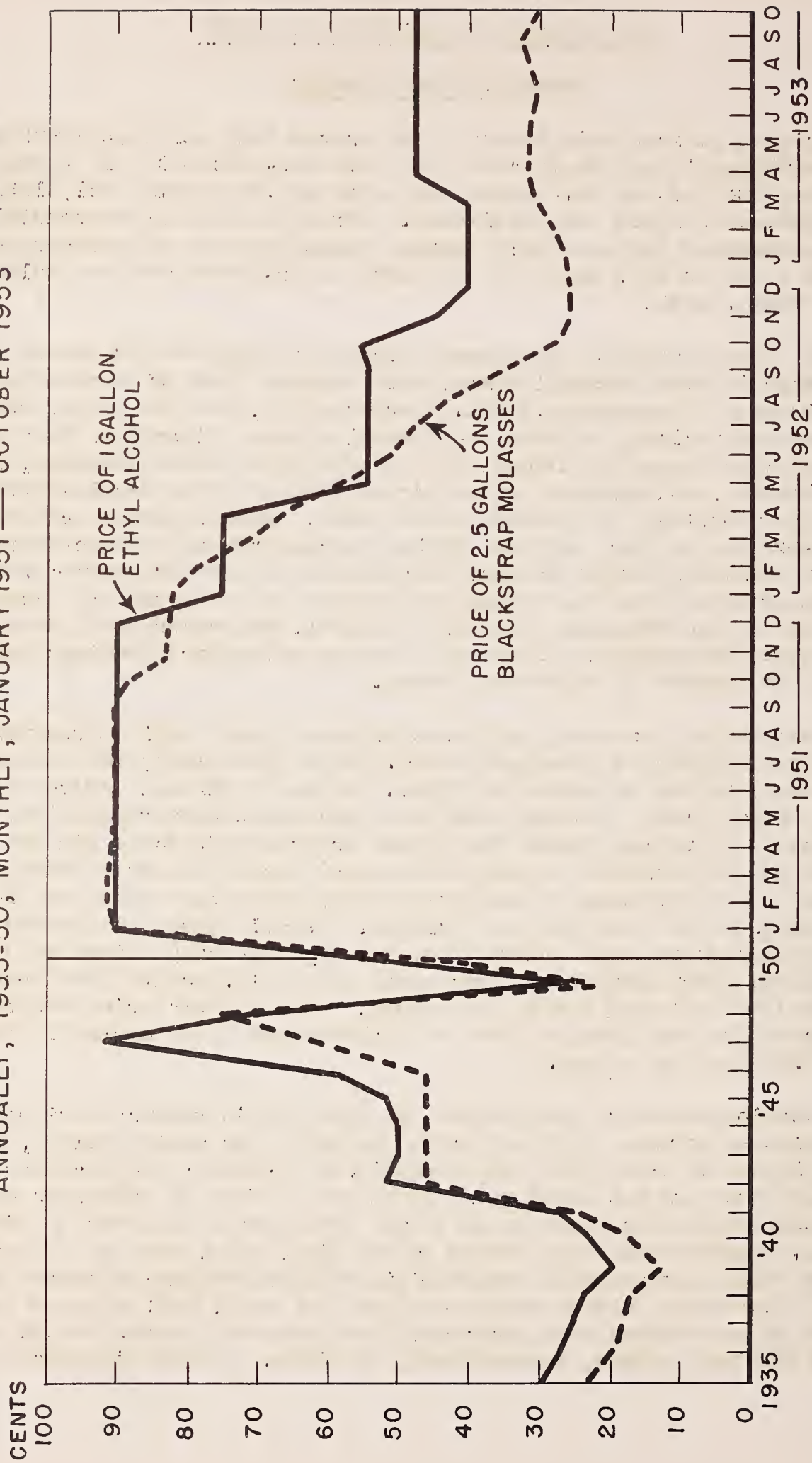


FIGURE 1.

in new crop supplies following the disposal of surplus molasses and virtually all producer supplies were contracted for by early spring of 1953. Thus there was very little pressure in 1953 from producer supplies seeking a market.

In addition, alcohol prices recovered slightly and advanced from 40 to 48 cents a gallon. A high level of business activity in the chemical industry and the reactivation by the RFC for a few months of four lines at the Kubuta, Penn. and Louisville, Ky. alcohol-butadiene plants had a stimulating effect on the alcohol market. Quoted alcohol prices have remained at the 48 cent level since April, 1953.

The molasses supply available in the United States was abnormally large in 1953. The late sale of Cuba's 1952 crop resulted in heavy shipments and a large carryover into 1953. However, it appears that the current rate of utilization is correspondingly high. With reduced supplies anticipated for 1954, continued effort to promote feed usage should result in a more stable marketing situation with somewhat higher prices.

Supplies

Available molasses supplies in 1953 were the largest on record. Total 1953 supplies are estimated at 620 million gallons compared to total supplies in 1952 of 529 million gallons, the previous post-war high. Supplies actually available in 1952 were less than those estimated in the last molasses issue of Sugar Reports because shipments from Cuba were delayed. Total supplies for 1951, 1952 and estimated supplies for 1953 are shown in table 1.

The huge volume of 1953 supplies can be primarily accounted for by the delayed shipments of 1952 Cuban crop molasses in the early months of 1953. The bulk of Cuba's large 1952 crop was not sold until November, 1952, when the asking price by Cuba was drastically reduced and entered the United States in 1953. What actually amounted to a two-price system was adopted by Cuba in disposing of her surplus supplies. Molasses entering into feed use was sold at 7 cents a gallon, f.o.b. Cuba, while molasses entering into alcohol production was sold for settlement at 4.5 cents per gallon upon certification of its use for this purpose by Internal Revenue Service. These prices were in sharp contrast with the 20 cents a gallon asking price first established by Cuba for 1952 crop molasses. With the sale of large quantities so late in the year, there was not sufficient time for all of these supplies to move into the U. S. market before 1953.

Of the 302 million gallons estimated to be supplied by Cuba in 1953, 162 million gallons represent old crop molasses, while only 140 million gallons were from the 1953 sugar crop. Restriction of the 1953 sugar crop to about 5 million Spanish long tons by the Cuban Government and the purchases of Cuban molasses by Great Britain and Canada curtailed new crop receipts. U. S. mainland receipts of Puerto Rican molasses were less in 1953 than in 1952 mainly because of British and Canadian purchases from that source also. Imports from

Table 1 U. S. Industrial Molasses Supplies, by Source, Calendar Years
1951 and 1952 and Supplies Potentially Available in 1953

Source	1953 ^{1/}	1952	1951
	- - - Million Gallons - - -		
Domestic:			
Hawaii ^{2/}	41	38	42
Puerto Rico ^{2/}	30	52	50
Beet	38	33	45
Mainland Cane Mills	49	52	44
Refiners' Blackstrap	35	36	33
Hydrol	18	18	18
Citrus	<u>9</u>	<u>9</u>	<u>12</u>
Total Domestic	220	238	244
Foreign Countries:			
Cuba	302	186	131
Mexico	28	22	25
Dominican Republic	26	28	17
Other Countries	<u>60</u>	<u>60</u>	<u>56</u>
Total Foreign	416	296	229
Exports	- 16	- 5	- 4
GRAND TOTAL	<u>620</u>	<u>529</u>	<u>469</u>

^{1/} Estimated.

^{2/} Includes only those quantities shipped to U. S. mainland.

other countries were slightly greater than in 1952. It is interesting to note that Great Britain, which obtained its total 1952 molasses requirements from other sources re-entered the Cuban and Puerto Rican markets in 1953 when prices were once again at a low level.

The record supplies of molasses available for domestic consumption in both 1952 and 1953 poses the question as to whether or not the upward trend in volume of supplies can be expected to continue. Figure 2 shows molasses supplies from domestic sources, Cuba, and other countries since 1935.

It is evident that future annual supply levels will depend largely upon Cuban sugar production. In 1953 Cuban molasses production was about 278 million gallons from the 5-million ton sugar crop, compared to approximately 400 million gallons in 1952 when sugar production reached about 7 million tons. If Cuba continues to use around 100 million gallons for domestic purposes and Great Britain makes some purchases of Cuban molasses, not over 150 million gallons a year should be available for export to the U. S. as long as crop restrictions to the 5-million ton level are maintained. It is not likely that imports from countries other than Cuba will increase. In fact they may show a tendency to decline slightly but may not go much below 90 million gallons. It appears that the Dominican Republic and Mexico will continue to market the bulk of their supplies in the U. S. The total imports from these two countries will probably remain between 45 and 50 million gallons yearly. Some beet molasses also will continue to be imported for industrial use on the East Coast. Imports from countries other than Cuba, Mexico, and the Dominican Republic seldom totaled more than about 20 million gallons in years prior to 1951 and usually were under 15 million gallons. The larger than usual imports from such sources in 1951 resulted from the high demand and increased price for molasses during the emergency period. In 1952 large imports from such sources were mainly occasioned by buyers seeking supplies during the period of bargaining with Cuba when imports from that source were merely trickling in.

It is not likely that domestic supplies will increase since the quota provisions of the Sugar Act specify the amount of sugar each domestic area may market annually. Domestically produced supplies available for mainland consumption including shipments from Puerto Rico and Hawaii totalled 238 million gallons in 1952 and 220 million gallons in 1953. The reduction is principally a reflection of the British purchase of Puerto Rican molasses in 1953. Assuming imports from other sources and domestic production remain at approximately the same levels as in 1952 and 1953, future supplies should not go much over 475 million gallons a year. This approximates average annual supplies in the 1948-51 period. Of course, the accuracy of these estimates depend upon the relative stability of conditions affecting the molasses market. Any situation which would bring about unlimited Cuban sugar production or cause abnormally high molasses prices could conceivably result in supplies as large as those that have been available in the past two years.

U.S. SUPPLIES OF INEDIBLE MOLASSES BY MAJOR SOURCES; DOMESTIC PRODUCTION, CUBAN IMPORTS AND IMPORTS FROM OTHER COUNTRIES 1935-1953

MILLIONS OF GALLONS
700

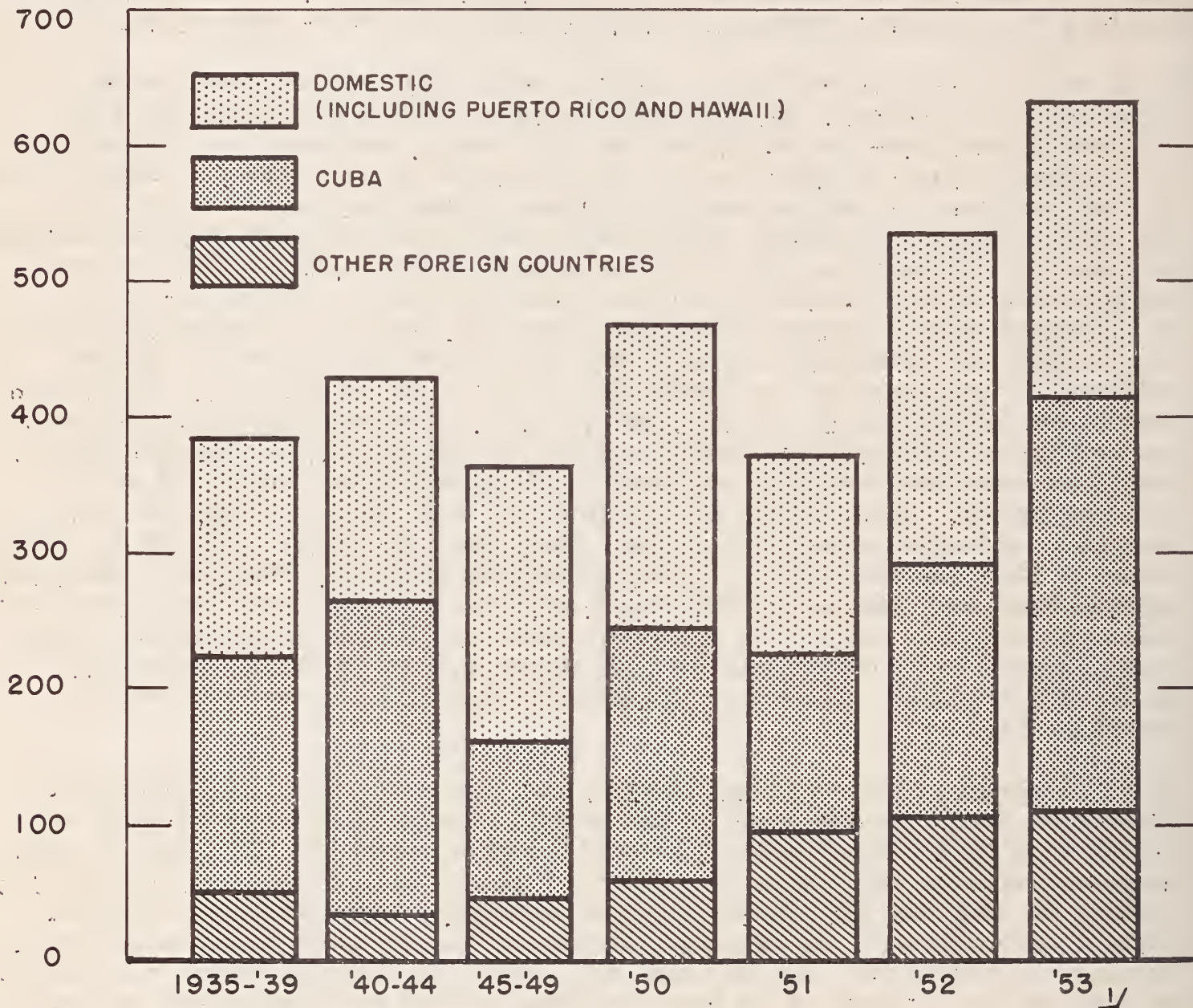


FIGURE 2.

UTILIZATION

Molasses usage in 1953 has been very high. Despite the heavy volume, it appears that available supplies will be practically all absorbed this year. There should be no problem of burdensome carryover into 1954. Estimates of molasses utilization in calendar year 1953 and also in calendar years 1951 and 1952 are shown below. These data were developed by using statistics of the Alcohol Tax Division of the Internal Revenue Service covering molasses utilization in alcohol plants in 1951, 1952 and to date in 1953, estimating probable use for alcohol during the remainder of the year and estimating all other uses including feed usage for all years. No changes in stocks were considered.

	Calendar Year		
	1953	1952	1951
	<u>Million gallons</u>		
Molasses Used For:			
Ethyl alcohol	195	159	152
Butanol and acetone	18	8	7
Spirits and rum	3	2	3
Feed	341	300	248
Yeast, vinegar and citric acid	55	53	52
Edible and miscellaneous	<u>8</u>	<u>7</u>	<u>7</u>
Total Utilization	<u>620</u>	<u>529</u>	<u>469</u>

Increased feed and alcohol usage both played major roles in the absorption of the large volume of supplies available in 1953. Feed usage is estimated at about 341 million gallons in 1953, the greatest quantity ever used for this purpose in any year. Feed usage in 1953 was about 41 million gallons, or about 12 percent more than the estimated 1952 usage of 300 million gallons. Use of molasses in ethyl alcohol production was up from 159 million gallons in 1952 to about 195 million gallons in 1953. This is an increase of 36 million gallons, or about 23 percent. Production of butanol and acetone required approximately 10 million gallons more of molasses than in 1952 (18 compared to 8). Use of molasses in yeast, vinegar and citric acid production also showed a slight increase over 1952.

Prices contributed to a high level of molasses usage both as a feedstuff and in alcohol production. Molasses prices were very favorable in relation to grain and other feedstuffs throughout 1953 except for those feed supplies distributed in the emergency drought feed program. Based on New York wholesale prices, corn is presently (October 1953) about \$0.95 per bushel higher than the price for a quantity of molasses of equivalent carbohydrate feeding value (6½ gallons). Table No. 5 shows current and past differentials between corn and molasses prices on an equivalent feeding value basis in relation to

NEW YORK WHOLESALE CORN-MOLASSES PRICE DIFFERENTIAL (EQUIVALENT FEEDING BASIS), CALENDAR YEARS 1935-52, MONTHLY JANUARY-SEPTEMBER, 1953 AND ESTIMATED FEED USAGE OF MOLASSES, CALENDAR YEARS 1935-52

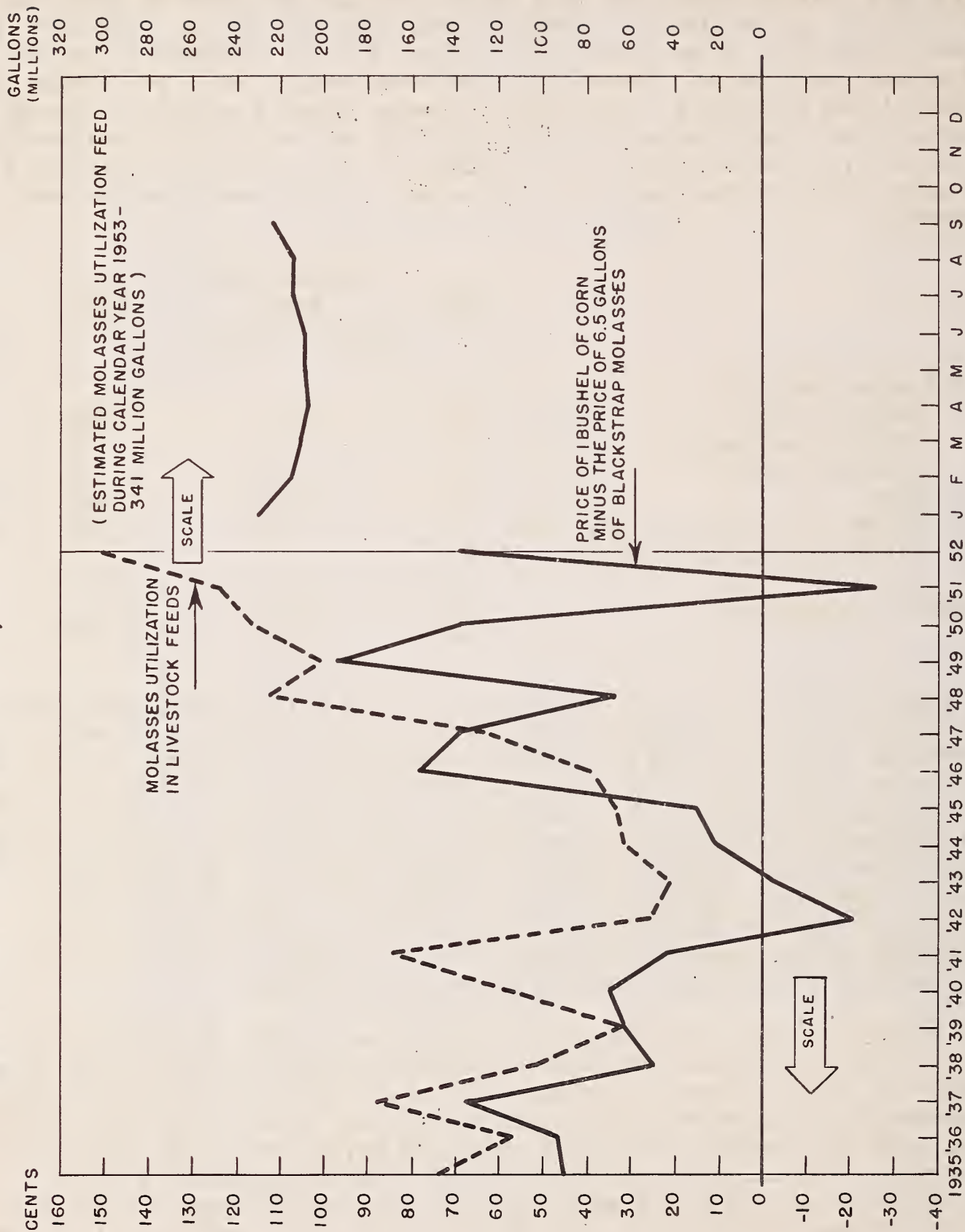


FIGURE 3.

molasses usage as a feed. In addition to favorable prices, there were other factors of importance at work increasing feed usage. Installation of new tank truck facilities made molasses more readily available at lower costs to small users in several areas. In addition, increased educational work by private and public agencies on the value of molasses as feedstuff and how it may be fed advantageously, brought molasses to the attention of many potential users. Along this line, the Sugar Branch published an information pamphlet entitled, "Feeding Molasses to Livestock," which has met with great response.

The special price of 4½ cents per gallon f.o.b. Cuba (approximately 6.5 cents delivered) for 1952 surplus Cuban supplies going into alcohol production played a large role in increased fermentation alcohol production. This permitted delivered raw material costs of about 16 cents per gallon of alcohol. About 2.4 gallons of molasses are required to produce one gallon of alcohol. No specific data on conversion costs are available; however, trade sources place these between 11 and 15 cents per gallon of alcohol produced. Thus, raw material and conversion costs were in the neighborhood of 30 cents a gallon, give or take a cent or two a gallon. Quoted alcohol prices in 1953 never went below 40 cents per gallon--although some sales may have been made at lower prices--and have been at 48 cents since April, 1953.

In addition to cheap raw material costs, the high level of alcohol production was supported by heavy utilization of alcohol by the chemical industry and the re-entry of the Reconstruction Finance Corporation for a limited time into the alcohol market. Ethyl alcohol supplies and utilization for calendar years 1951, 1952 and corresponding estimates for 1953 are shown in the following table:

	Calendar Year		
	1953	1952	1951
	Million Wine Gallons		
<u>Supplies 1/</u>			
Beginning stocks	45.2	59.4	32.1
Domestic production (source):			
Molasses	85.0	69.3	64.9
Petroleum by-products	152.0	127.7	125.5
Grain	3.0	27.5	57.2
Miscellaneous	11.0	5.4	5.3
Total Production	251.0	229.9	252.9
Imports	5.0	29.0	118.2
Total Supply	301.2	318.3	403.2

Continued-

(Continued)

	Calendar Year		
	1953	1952	1951
	Million Wine Gallons		
Utilization ^{2/}			
Synthetic rubber	40.0	67.9	120.6
Solvents, aldehydes and other chemical products	201.2	186.8	201.1
Tax Paid Withdrawn	13.0	11.4	18.1
Completely denatured alcohol and miscellaneous	7.0	7.0	4.0
Total Utilization	261.2	273.1	343.8
Ending Stocks	40.0	45.2	59.4

1/ Supply figures for 1951 and 1952 obtained from statistics of Alcohol Tax Unit of Internal Revenue Service. Data for 1953 were developed by using statistics of the Alcohol Tax Unit covering supplies January-August and estimating probable supplies the remainder of the year.

2/ Synthetic Rubber data furnished by Office of Synthetic Rubber, Reconstruction Finance Corporation. Tax paid figures and ending stocks obtained from Alcohol Tax Unit statistics. Calendar year utilization in solvents, aldehydes and other chemical products is residual resulting from total utilization minus synthetic rubber, tax paid, completely denatured alcohol, and miscellaneous usage.

* * * * *

Although utilization of large quantities of molasses in alcohol was helpful in disposing of the burdensome molasses surplus, a continued high rate of usage does not appear likely. The synthetic industry is rapidly approaching an annual production capacity of some 230 million gallons. A number of petroleum companies and nearly all of the former major fermentation alcohol producers will have synthetic production facilities by 1954. A look at the above alcohol utilization figures will show why the molasses trade will no longer be able to count on the alcohol market to absorb molasses supplies of any significant quantity. It is estimated that total alcohol utilization will be about 261 million gallons in 1953. Of this amount, 40 million gallons were used in the synthetic rubber program of the Reconstruction Finance Corporation. Plants using ethyl alcohol were closed in the fall of 1953 and a program has been initiated to dispose of all Reconstruction Finance Corporation's rubber facilities to private interests. Alcohol butadiene plants constitute only a small part of Reconstruction Finance Corporation's total facilities. Production of butadiene from ethyl alcohol is more expensive than production directly from petroleum products. Thus it is uncertain whether such facilities will be used again by competitive private industry or the Government except during a national emergency period.

Thus, even assuming that the chemical industry maintains a rate of usage as high as that in 1953, total alcohol requirements probably will not exceed 220-230 million gallons a year. With a synthetic capacity of 230 million gallons, it appears that there will be little room for fermentation alcohol. It must be noted that when the synthetic industry reaches planned capacity, it will be in a position price-wise to drive competing fermentation alcohol producers out of the market unless fermentation producers are able to obtain raw materials at extremely low costs.

The question arises then as to the effects on molasses utilization and prices that the conditions outlined above will have. Fortunately it appears that prospects for divorcing the molasses market and molasses prices from the effects of conditions in the alcohol market are the brightest in history. As discussed in the previous section, future supplies probably will not go much over some 475 million gallons a year assuming Cuban sugar production is maintained at about 5 million tons. Even without an increase in feed usage above the 1953 level of about 341 million gallons and with such uses as yeast, vinegar, citric acid, edible and miscellaneous at about 63 million gallons, 404 million gallons have a market outside the alcohol outlet.

With the volume of supplies in sight for 1954, careful attention to sales practices by producers should result in improved prices as indications point to buyer competition among distributors particularly if feed usage continues to increase.

With the goal in sight of adequate markets for available supplies, the molasses trade should continue to exert effort to promote increased feed utilization. A further increase of 75 to 100 million gallons in feed usage, about half of that which has occurred since 1947, should result in a more stable molasses market, regardless of any probable volume of imports, with prices more closely related to feed values and independent of the vagaries of the alcohol market.

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TABLE 2

ESTIMATED UTILIZATION OF INDUSTRIAL MOLASSES IN THE U.S. MAINLAND,
CALENDAR YEARS 1940-1953

NOVEMBER 1953

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Industrial Molasses Utilization In:														
(Million gallons)														
Ethyl Alcohol.....	205.1	271.0	222.7	168.8	313.7	146.9	73.2	139.2	135.6	151.1	142.9	151.7	158.8	195.0
Products other than ethyl alcohol	48.6	69.2	27.7	40.2	43.7	32.8	40.4	19.2	11.1	20.0	17.7	6.6	8.0	18.0
Total	253.7	340.2	250.4	209.0	357.4	179.7	113.6	158.4	146.7	171.1	160.6	158.3	166.8	213.0
In distilleries	3.4	4.2	6.7	9.9	10.6	12.4	3.5	2.8	3.1	4.3	2.4	2.6	2.4	3.0
Total in alcohol plants & distilleries 1/...	257.1	344.4	257.1	218.9	368.0	192.1	117.1	161.2	149.8	175.4	163.0	160.9	169.2	216.0
Livestock Feed, Direct Feeding & Silage 2/...	112.4	162.5	50.5	41.9	62.3	66.3	78.4	127.9	224.6	200.6	233.2	248.7	300.4	341.0
Other Uses														
Yeast, citric acid & vinegar	38.0	38.0	38.5	38.5	41.2	47.3	46.6	51.0	51.0	51.0	51.0	52.0	53.0	55.0 ¹³
Edible sirup & molasses	6.0	8.0	12.0	15.7	9.0	10.3	21.8	11.4	8.3	7.5	7.0	7.0	7.0	8.0
Total other uses 3/...	44.0	46.0	50.5	54.2	50.2	57.6	68.4	62.4	59.3	58.5	58.0	59.0	60.0	63.0
Total Utilization	413.5	559.9	358.1	315.0	480.5	316.0	263.9	351.5	433.7	434.5	454.2	468.6	529.6	620.0

1/ Data are from the Alcohol Tax Unit, Internal Revenue Service.

2/ Data are estimated by subtracting molasses used in alcohol plants and distilleries and an estimate of "other uses" from total mainland molasses supplies and using the residual as molasses utilized in feeds. No changes in stocks were considered. Information from 1943-46 from data issued by U. S. Tariff Commission.

3/ Data from 1940-42 and 1947-53 estimated by Sugar Branch and 1943-46 from U. S. Tariff Commission.

TABLE 3 INDUSTRIAL MOLASSES, MAINLAND PRODUCTION, IMPORTS AND EXPORTS INTO THE UNITED STATES
MAINLAND, AND EXPORTS, CALENDAR YEARS 1935 - 1953 (1000 Gallons)

Year	Mainland cane 1/	Domestic beet 2/	Refiners' blackstrap 3/	Citrus 4/	Hydrol 5/	TOTAL MAINLAND PRODUCTION
1935	24,790	24,900	28,183	--	9,366	87,239
1936	33,495	25,400	28,237	--	10,960	98,092
1937	36,546	24,700	30,174	--	10,781	102,201
1938	42,117	26,400	28,604	--	10,642	107,763
1939	34,142	27,200	27,913	--	11,836	101,091
1940	23,286	25,920	28,966	--	12,138	90,310
1941	26,519	23,892	34,272	--	16,962	101,645
1942	27,883	25,640	21,615	--	19,884	95,022
1943	32,672	24,044	28,683	--	18,638	104,037
1944	35,841	35,937	33,944	--	17,668	126,040
1945	34,804	40,943	30,041	2,650	17,169	126,917
1946	28,450	43,818	25,111	8,058	16,716	122,153
1947	27,942	34,539	34,653	10,342	20,261	127,737
1948	40,305	42,333	35,612	10,953	18,364	147,567
1949	44,362	37,851	32,944	7,259	19,031	141,447
1950	44,814	38,918	34,326	7,929	21,388	147,375
1951	44,350	45,377	32,775	11,926	18,411	152,839
1952	51,901	33,230	36,221	9,333	18,063	148,748
1953	49,000	38,000	35,000	9,000	18,000	149,000

1/ 1935-47 from "World Sugar Situation", Bureau of Agricultural Economics, USDA, September 1949; 1948-53 from unpublished data of Sugar Branch, IIA.

2/ 1935-40 estimated. 1940-52 are reports submitted by beet sugar companies to the Sugar Branch, 1953 estimated.

3/ 1935-47 estimated by multiplying the refiners' production of sugar (short tons, raw value) by 6.25; 1948-52 from reports submitted to the Sugar Branch, IIA; 1953 estimated by Sugar Branch, IIA.

4/ Obtained from reports of the Florida Citrus Processors Association, 1953 production estimated.

5/ Estimated by multiplying total dextrose sales by a constant, assuming 2.58 gallons of hydriol per 100 pounds of dextrose.

(continued)

TABLE 3
(cont'd)INDUSTRIAL MOLASSES, MAINLAND PRODUCTION, INSHIPMENTS AND EXPORTS INTO THE UNITED STATES
MAINLAND, CALENDAR YEARS 1935 - 1953 (1000 Gallons)

Year	Cuba 6/	Dominican Republic 6/	Mexico 6/	Hawaii 7/	Puerto Rico 6/	Other 8/	Total imports & inshipments	Exports	TOTAL MARKET SUPPLIES
1935	176,525	16,044	--	28,570	52,728	44,308	318,175	8,103	397,311
1936	184,282	22,133	--	21,232	25,749	28,646	282,042	19,496	360,638
1937	237,272	19,816	--	31,015	27,962	44,362	360,427	12,503	450,125
1938	130,041	19,845	1,044	28,141	19,304	26,418	224,793	11,902	320,654
1939	160,386	16,419	1,153	28,979	20,034	12,698	239,669	19,885	320,875
1940	238,896	21,054	8,256	31,842	26,263	4,224	330,535	7,390	413,455
1941	348,964	40,432	4,228	45,441	18,492	7,608	465,165	6,873	559,937
1942	194,031	8,173	8,477	36,838	12,098	3,849	253,466	435	358,053
1943	145,220	--	3,102	49,805	10,025	3,067	211,216	234	315,019
1944	249,584	40,832	70	38,531	17,632	7,986	354,635	150	480,525
1945	113,614	17,546	--	36,942	16,268	6,362	190,732	1,621	316,028
1946	57,968	18,458	10,021	32,226	17,287	6,743	142,703	959	263,897
1947	105,387	21,328	21,160	37,461	31,956	7,130	224,422	618	351,541
1948	139,258	20,364	33,114	44,271	44,811	12,523	294,341	8,176	433,732
1949	161,872	17,743	23,595	42,523	43,589	11,566	300,888	7,836	434,499
1950	186,784	16,828	21,184	41,076	21,224	19,045	316,141	9,344	454,172
1951	130,472	16,693	25,195	41,572	49,951	56,029	319,912	4,177	468,574
1952	186,676	27,946	21,547	37,942	52,252	59,952	386,315	5,424	529,639
1953	302,000	26,000	28,000	41,000	30,000	60,000	487,000	16,000	620,000

6/ Summarized from Bureau of Customs data and reports from the Department of Commerce.

7/ 1935-47 from published data Department of Commerce. 1948-52 data furnished by Hawaiian Sugar Planters' association. 1953, estimated by Sugar Branch, IIA

8/ Includes shipments from Canada, Poland, Peru, Java, Netherlands, Haiti, British West Indies, French West Indies, Italy, Denmark, Germany, France, British Guiana, Nicaragua, Trinidad, Egypt, Philippines, Panama, and Formosa.

PRODUCTION OF INDUSTRIAL MOLASSES, EXPORTS AND INSHIPMENTS TO THE UNITED STATES
MAINLAND, THE PORTION OF THE PRODUCTION NOT SHIPPED TO HAWAIIAN STATES MAINLAND
BY PRINCIPAL OFFSHORE AREAS SUPPLYING THE UNITED STATES MAINLAND,
CALENDAR YEARS 1935 - 1953 (1000 GALLONS)

TABLE 4

Year	CUBA		PUERTO RICO	
	Imports into the U. S. mainland 5/1/	Production minus imports into U. S. mainland	Inshipments to the U. S. mainland 5/1/	Production minus inshipments into U. S. mainland
	Production 2/4/		Production 2/6/	
1935	182,080	176,525	5,555	66,600
1936	243,519	184,282	59,237	41,400
1937	357,610	237,272	120,338	41,200
1938	234,166	130,041	104,125	46,600
1939	250,753	160,386	90,367	34,500
1940	302,992	238,896	64,096	44,200
1941	439,953	348,964	90,939	40,300
1942	332,230	202,940	129,290	51,400
1943	139,504	145,220	5,716	40,200
1944	453,914	249,583	204,331	28,200
1945	194,741	113,614	81,127	40,400
1946	233,650	57,968	175,682	38,400
1947	299,400	105,387	194,013	50,800
1948	332,000	139,258	192,742	54,800
1949	291,599	161,372	129,727	59,275
1950	262,365	186,784	75,581	49,522
1951	288,625	130,472	158,153	60,300
1952	397,900	186,676	211,224	69,800
1953	278,000	n.a.	n.a.	60,000

1/ The import and inshipment data relate to calendar years.

2/ Crop-year basis, the processing season extending from January through June.

3/ Processing in Hawaii takes place in each month of the year and is reported on a calendar year basis.

4/ Data are from "World Sugar Situation" B.E., September 1949 and from reports by the Cuban Sugar Stabilization Institute.

5/ Summarized from customs' sheets and reports from the Department of Commerce.

6/ Data are from "Annual Report of the President, Association of Sugar Producers of Puerto Rico." 1953 production estimated by Sugar Branch, PMA.
(continued)

TABLE 5

RELATIONSHIPS BETWEEN THE NEW YORK CORN-
MOLASSES PRICE AND THE ESTIMATED VOLUME OF UTILIZATION
OF INDUSTRIAL MOLASSES IN FEED, CALENDAR YEARS 1935-SEPT.1953

Year	Price of 1 bushel of corn minus the price of 6 $\frac{1}{2}$ gals. of molasses 1/ 2/ (cents)	Estimated molasses utilization in livestock feeding (million gallons)
1935	/ 45.1	149.2
1936	/ 47.0	115.0
1937	/ 68.3	176.9
1938	/ 25.5	104.0
1939	/ 30.7	63.3
1940	/ 35.2	112.4
1941	/ 22.8	169.5
1942	- 20.8	50.5
1943	- .2	41.9
1944	/ 10.4	62.3
1945	/ 14.9	66.3
1946	/ 78.6	78.4
1947	/ 69.2	127.9
1948	/ 33.0	224.6
1949	/ 37.2	200.6
1950	/ 68.3	233.2
1951	- 26.8	248.7
1952	/ 69.8	300.4
1953 3/	/ 107.7	341.0

1/ 6 $\frac{1}{2}$ gallons of molasses is the carbohydrate equivalent of 1 bushel of corn.

2/ Corn prices controlled March 1943-Nov. 1946; molasses prices Jan. 1942-March 1947.

3/ Price differential for period Jan.-Sep. 1953; estimated molasses utilization for entire calendar year.

TABLE 6
MOLASSES, BLACKSTRAP: PRICE PER GALLON $\frac{1}{2}$, F.O.B. TANK CAR NEW YORK,
MONTHLY, JANUARY 1935-OCTOBER 1953 (CENTS)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Yearly average
1935	7.62	7.62	8.12	8.20	8.25	8.25	8.25	3.25	8.25	8.25	8.25	8.25	8.13
1936	8.25	8.25	8.25	8.25	8.25	8.25	8.25	7.55	7.25	7.25	7.25	7.25	7.36
1937	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.19	7.00	7.00	7.00	7.18
1938	7.00	7.00	7.00	7.00	6.70	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.68
1939	6.50	6.50	4.50	4.50	4.50	4.50	4.50	4.50	5.25	5.75	5.75	5.75	4.95
1940	5.75	5.75	5.75	5.75	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	6.58
1941	7.00	7.00	7.25	7.88	8.20	8.50	9.25	9.50	10.25	12.80	13.44	15.19	9.69
1942	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1943	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1944	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1945	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1946	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1947	18.50	18.50	18.50	20.50	23.70	22.38	21.75	22.30	23.25	25.70	30.38	34.12	24.15
1948	37.00	37.00	37.00	37.00	37.00	34.44	26.60	25.50	24.00	21.20	20.50	20.50	29.81
1949	15.25	9.75	9.00	8.70	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.10	9.05
1950	8.00	8.00	8.00	8.00	8.40	10.90	14.00	17.55	20.75	26.25	30.85	32.50	16.10
1951	36.50	36.50	36.50	36.50	36.00	36.00	36.00	36.00	36.00	35.50	33.50	33.50	35.64
1952	33.50	31.50	28.62	26.70	23.50	21.00	19.25	17.25	14.40	11.12	10.12	10.50	20.62
1953	11.00	11.38	12.20	12.50	12.50	12.10	12.00	12.50	12.70	12.50			

1/ Prices were controlled from January 1942 - March 1947

Source: January 1935-December 1950 compiled by Bureau of Agricultural Economics from Oil, Paint and Drug Reporter; January 1951 - October 1953 from Sugar Branch, PMA, weekly Molasses Market Report.

TABLE 7

INDUSTRIAL MOLASSES USED IN THE PRODUCTION OF ETHYL ALCOHOL AND
OTHER PRODUCTS OF INDUSTRIAL ALCOHOL PLANTS AND IN DISTILLED SPIRITS IN
DISTILLERIES, CALENDAR YEARS 1935-53 (1000 gallons)

Year	Industrial molasses 1/used in the production of --			Total usage of industrial mo- lasses in indus- trial alcohol plants and dis- tilleries
	Ethyl alcohol 2/	A.B.E. 3/	Distilled spirits 4/	
1935	182,348	13,908	7,846	204,102
1936	173,917	21,524	6,195	201,636
1937	184,708	38,845	5,644	229,197
1938	151,911	14,368	6,400	172,679
1939	176,948	30,919	5,743	213,610
1940	205,119	48,624	3,425	257,168
1941	271,043	69,175	4,192	344,410
1942	222,741	27,699	6,749	257,189
1943	168,800	40,211	9,860	218,871
1944	313,665	43,680	10,577	367,922
1945	146,914	32,784	12,436	192,134
1946	73,170	40,413	3,497	117,080
1947	139,248	19,183	2,803	161,234
1948	135,583	11,132	3,082	149,777
1949	151,061	19,977	4,276	175,314
1950	142,859	17,685	2,435	162,979
1951	151,653	6,570	2,595	160,818
1952	158,777	8,013	2,428	169,218
1953 5/	195,000	18,000	3,000	216,000

1/ Includes Invert molasses from 1935-44.

2/ Includes "molasses mixtures" used in making ethyl alcohol.

3/ Acetone, butyl alcohol and some ethyl alcohol.

4/ Chiefly rum and gin.

5/ Estimated by the Sugar Branch.

Source: Annual Report of the Commissioner of Internal Revenue, U. S. Treasury Department and Monthly Reports of the Alcohol Tax Unit, Internal Revenue Service.

QUANTITY OF ETHYL ALCOHOL PRODUCED IN INDUSTRIAL ALCOHOL PLANTS
FROM SPECIFIED RAW MATERIALS, CALENDAR YEARS 1935-53 (1000 WINE GALLONS)

1/ Additional amounts of alcohol were made from "molasses mixtures"; such alcohol is included in the "From all other materials." 2/ Ethyl sulfate prior to 1950, with the addition of ethylene gas after that year. 3/ Additional amounts of alcohol were made from "grain mixtures"; such alcohol is included in the "From all other materials" column. 4/ Chiefly sulphite liquors, cellulose pulp, chemical & crude alcohol mixtures, whey, pineapple juice, grain & molasses mixtures, & potatoes & potato products. 5/ Gross production of ethyl alcohol minus the number of wine gallons of unfinished products used in redistillation. 6/ Computed by Sugar Branch, PMA, by using historical raw material yields computed from "Statistics on Alcohol."

Source: "Statistics on Alcohol," Alcohol Tax Unit, Bureau of Internal Revenue, converted from proof gallons of 100 proof to wine gallons of 190 proof by Sugar Branch, PMA.

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Table 9

ETHYL ALCOHOL: FISCAL YEAR WITHDRAWALS AND LOSSES, PRODUCTION, AND STOCKS ON HAND AT END OF FISCAL YEAR, INDUSTRIAL ALCOHOL PLANTS, 1935-1953
(1000 PURE GALLONS)

Fiscal Year Ended June 30	Tax Paid	Used For Denaturation 2/	For Use of the United States	Other Uses 3/	Losses 4/	Total Withdrawals Plus Losses 5/	Production	Stocks June 30
1935	8,943	85,795	449	1,180	292	96,659	95,077	13,291
1936	12,659	90,778	523	1,270	231	105,461	103,224	11,211
1937	16,995	94,381	543	1,350	278	113,552	117,464	14,981
1938	15,251	86,454	500	1,415	276	103,396	105,807	16,867
1939	11,658	92,445	557	1,515	261	106,436	105,799	16,242
1940	12,813	117,538	645	1,542	261	132,799	128,278	11,473
1941	14,667	144,677	1,945	1,608	367	163,264	157,287	5,470
1942	13,122	197,242	22,800	1,612	434	235,210	220,825	15,271
1943	2,987	214,897	54,276	1,115	1,057	274,332	191,947	112,065
1944	3,252	512,337	64,420	1,239	889	532,137	311,015	67,326
1945	14,651	511,283	58,532	1,161	726	586,358	342,153	75,600
1946	24,875	207,083	6,711	1,379	597	240,545	173,362	58,178
1947	24,813	177,911	1,547	1,374	551	206,196	130,947	14,219
1948	20,399	178,764	150	1,810	473	201,596	174,895	20,144
1949	21,498	170,487	339	1,420	536	194,280	184,745	26,350
1950	21,350	169,322	306	2,230	526	193,734	165,021	12,226
1951	22,530	178,414	18,539	1,325	470	221,278	234,176	62,508
1952	14,588	257,697	61,104	1,306	447	335,142	245,945	46,514
1953	12,402	234,082	18,520	1,312	500	266,816	188,746	38,167

1/ For beverage use.

2/ Represents withdrawals for denaturation 1934 through 1941. For 1942 through 1947 represents all products used for denaturation which were regarded, upon receipt at denaturation plants, as alcohol, whether originally produced as alcohol by industrial alcohol plants or as spirits or unfinished spirits by registered distilleries.

This explains why the withdrawal data are so much larger than the production figures during the middle 1940's.

3/ Represents withdrawals for hospital, scientific, and educational use, for export, and in Puerto Rico for medicinal, beverage, and industrial use. 4/ Losses in industrial alcohol bonded warehouses, exclusive of losses in denaturing plants. 5/ See 2/ 6/ Estimated by Sugar Branch, PMA. Source: same as for Table 8.

TABLE 10
USES OF SPECIALLY DENATURED ALCOHOL PROD. IN U.S. MILL MANUFACTURING
PLANTS, FISCAL YEARS 1935-52 (1000 Wine Gallons)

Fiscal year ended June 30	Used as a raw material converted in chemical manufacturing 2/			Other		Total Utilization
	Solvent 1/	Aldehydes	Synthetic rubber	Chemical Products	Uses other than solvent and chemical manufactur- ing 3/	
1935 4/	-	-	-	-	-	-
1936 5/	63,408	16,651	-	28,608	468	109,134
1937 5/	79,018	27,160	-	32,459	472	139,109
1938 4/	-	-	-	-	-	-
1939 4/	-	-	-	-	-	-
1940 6/	46,238	24,572	-	33,209	4,345	108,364
1941	59,842	30,339	-	40,323	4,022	134,526
1942	86,391	34,403	-	40,354	8,090	169,238
1943	72,987	44,733	20,399	41,380	2,209	181,708
1944	66,310	59,730	286,033	52,202	1,717	465,992
1945	68,031	55,734	315,940	53,524	2,438	495,667
1946	50,898	54,019	62,672	27,801	994	196,384
1947	53,257	65,551	9,260	28,027	996	157,091
1948	47,016	72,932	371	28,494	1,030	149,843
1949	46,445	68,253	1,428	32,018	856	149,000
1950	51,285	87,156	3,873	35,797	975	179,086
1951	57,780	110,707	17,416	45,794	1,175	232,872
1952	n.a.	n.a.	39,000 7/	n.a.	n.a.	n.a.

1/ Specially denatured alcohol used as a solvent is utilized principally in connection with the following products or uses: (a) lacquers, varnishes, and enamels; (b) plastics; (c) solvents and thinners for cellulose, shellac and resin products; (d) lotions, perfumes, and other toilet preparations, (e) the processing of industrial, food, drug, and other products, for instance the dehydration of nitrocellulose; (f) pharmaceutical products, such as rubbing alcohol; and (g) cleaning, preserving, and flavoring preparations.

2/ When used as a raw material, the denatured alcohol reacts in the formation of other chemicals. Principal products using denatured alcohol as a raw material are: aldehydes, synthetic rubber, vinegar, ethyl acetate, ethyl chloride, esters, ethers, ethylene dibromide, etc.

3/ This category includes: Brake fluids, cutting oils, other fluid uses, motor fuels and fuel uses, and experimental uses.

4/ No data available. No reports issued.

5/ Total quantities used, including large quantities previously recovered for re-use.

6/ Beginning with 1940, the figures relate only to new denatured alcohol, and exclude previously recovered alcohol which was re-used.

7/ Source: Office of Synthetic Rubber, Reconstruction Finance Corporation

SOURCE: Alcohol Tax Unit, Internal Revenue Service, Treasury Department

TABLE 11
ETHYL ALCOHOL, 190 PROOF, NEW YORK AVERAGE MONTHLY WHOLESALE PRICE
TAX FREE, TANK CAR LOTS, JANUARY 1935- OCTOBER 1953
(CENTS PER GALLON)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1935	28.5	28.5	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
1936	29.2	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	25.5
1937	25.0	25.0	25.0	25.0	25.0	25.5	26.0	26.0	26.0	26.0	26.0	26.0
1938	26.0	26.0	24.2	24.0	24.0	24.0	23.5	22.0	22.0	22.8	23.0	22.5
1939	20.8	20.0	19.6	18.5	18.5	18.5	18.5	18.5	18.5	20.1	20.5	20.5
1940	20.5	20.5	20.5	20.5	20.5	20.5	20.5	22.5	22.5	23.5	23.5	24.5
1941	24.5	24.5	24.5	25.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
1942	52.0 ^{1/}	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
1943	52.0	52.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
1944	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
1945	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.5	52.7	55.5
1946	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	76.9 ^{1/}	84.0
1947	84.0	84.0	84.0	98.0	98.0	98.0	98.0	87.0	87.0	90.6	96.0	94.9 ^{2/}
1948	94.5	94.5	93.0	91.0	88.0	86.5	85.0	77.5	75.0	75.0	62.5	46.2
1949	38.5	24.5	21.0	21.0	21.0	21.0	29.0	29.0	29.0	29.0	29.0	29.0
1950	29.0	29.0	32.0	35.0	35.0	37.0	39.0	39.0	75.0	85.0	90.0	90.0
1951	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
1952	75.0	75.0	75.0	75.0	55.0	55.0	55.0	55.0	55.0	55.2	44.1	40.0
1953	40.0	40.0	40.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	-	-

Source: Oil, Paint, and Drug Reporter.

^{1/} Beginning and ending of price controls.

^{2/} In the second week of December the price quotation changed from a price "at works" to a price "delivered east of the Mississippi River."

TABLE 12

INSHIPMENTS OF INDUSTRIAL MOLASSES TO THE U. S. MAINLAND EXPRESSED
AS A PERCENT OF TOTAL ANNUAL PRODUCTION IN CUBA, PUERTO RICO AND
HAWAII, CALENDAR YEARS 1935 - 1952

Year	Imports and Inshipments to the United States Mainland			
	Cuba	Puerto Rico	Hawaii	All Areas
1935	96.9	19.2	67.0	88.5
1936	75.7	62.2	45.7	69.9
1937	66.3	67.9	68.4	66.7
1938	56.0	41.4	58.3	54.3
1939	64.0	61.0	64.8	63.8
1940	78.8	59.4	70.2	75.7
1941	79.3	45.9	92.1	78.0
1942	58.4	23.5	78.4	56.4
1943	104.1	24.9	98.8	89.1
1944	55.0	62.5	82.6	57.8
1945	53.3	40.3	82.5	59.4
1946	24.8	45.0	89.2	34.9
1947	35.2	62.9	76.8	43.8
1948	41.9	81.3	102.2	53.1
1949	55.5	73.5	92.3	62.5
1950	71.2	63.1	99.3	73.3
1951	45.2	82.8	92.9	77.3
1952	46.9	74.9	86.1	54.1

SOURCE: Table 4.

TABLE 13
MOLASSES USED IN ETHYL ALCOHOL PRODUCTION
MONTHLY, JANUARY 1951- AUGUST 1953

Month	1951	1952	1953
	-----Million Gallons-----		
January	4.9.	12.4 .	27.4
February	6.2	8.9	23.9
March	7.2.	11.0 .	20.1
April	13.5.	9.1 .	21.5
May	17.3.	9.5	19.5
June	11.8.	16.7 .	17.7
July	12.9.	21.4	16.7
August	17.4.	14.8 .	11.1
September	16.5.	12.2 .	
October	15.3.	12.0 .	
November	16.4.	12.4 .	
December	12.9	18.6 .	

Source: Alcohol Tax Unit, Internal Revenue Service.